What Is Claimed Is:

1. Apparatus for loading therapeutic materials into brachytherapy needles comprising:

a loading tube with proximal and distal ends, a lumen extending therebetween, and first and second transverse slots disposed between the proximal and distal ends;

a first cartridge comprising a plurality of seed chambers, the first cartridge slidably disposed in the first transverse slot; and

a second cartridge comprising a plurality of spacer chambers, the second cartridge slidably disposed in the second transverse slot.

2. The apparatus of claim 1 further comprising a plunger configured for reciprocation in the lumen.

3. The apparatus of claim 1 further comprising means for retaining a spacer in each one of the plurality of spacer chambers.

4. The apparatus of claim 1 further comprising means for retaining a radioactive seed in each one of the plurality of seed chambers.

5. The apparatus of claim 1 wherein the distal end of the loading tube is adapted to be disposed within an interior lumen of a brachytherapy needle.

6. The apparatus of claim 1 wherein the first and second cartridges are configured to be manually advanced through the first and second

transverse slots.

7. The apparatus of claim 1 wherein the first cartridge is fabricated from a shielding material.

8. The apparatus of claim 7 wherein the shielding material is lead.

9. The apparatus of claim 1 wherein the first and second cartridges are fabricated from a transparent or translucent material.

10. The apparatus of claim 9 wherein the material is a polymer.

11. A method for loading therapeutic materials into brachytherapy needles comprising:

providing apparatus comprising a loading tube with proximal and distal ends, a lumen extending therebetween, and first and second transverse slots, a first cartridge comprising a plurality of seed chambers loaded with radioactive seeds, the first cartridge slidably disposed within the first transverse slot, a second cartridge comprising a plurality of spacer chambers loaded with spacers, the second cartridge slidably disposed within the second transverse slot, a plunger, and a brachytherapy needle;

coupling the distal end of the loading tube within a lumen of the brachytherapy needle;

inserting a distal end of the plunger within the loading tube lumen; and

distally advancing the plunger relative to the loading tube to dislodge a radioactive seed or a

spacer from a cartridge chamber aligned with the loading tube lumen and to advance the seed or spacer into the needle lumen.

12. The method of claim 11 further comprising proximally retracting the plunger.

13. The method of claim 12 further comprising sliding the cartridges within the transverse slots to align subsequent seeds and spacers with the loading tube lumen.

14. The method of claim 13 further comprising loading the needle with seeds and spacers in a predetermined packing arrangement.

15. Apparatus for loading therapeutic materials into brachytherapy needles comprising:

a loading tube having proximal and distal ends, a lumen extending therebetween, and first and second transverse slots disposed between the proximal and distal ends;

first and second cartridges slidably disposed in the first and second transverse slots, the first and second cartridges comprising a plurality of first and second chambers, respectively; and

a plunger disposed for reciprocation within the lumen.

16. The apparatus of claim 15 further comprising means for retaining a spacer in each one of the plurality of second chambers.

17. The apparatus of claim 15 further comprising means for retaining a radioactive seed in each one of the plurality of first chambers.

18. The apparatus of claim 15 wherein the distal end of the loading tube is adapted to be disposed within an interior lumen of a brachytherapy needle.

19. The apparatus of claim 15 wherein the first and second cartridges are configured to be manually advanced through the first and second transverse slots.

20. The apparatus of claim 15 wherein the first cartridge is fabricated from a shielding material.